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OPTICAL FIBER AMPLIFIER WITH DISPERSION COMPENSATION FUNCTION

Abstract:

PROBLEM TO BE SOLVED: To obtain a compact low noise optical fiber amplifier with dispersion compensation function, by connecting a rare earth doped optical fiber with which a chirp fiber grating is connected, with the second port of a 3-port type circulator.

SOLUTION: A WDM coupler 5, an erbium doped optical fiber 3 and a 1.55 μm band linear chirp fiber grating 8 are connected in series with the second port of a 3-port type circulator 1. Through the WDM coupler 5, the erbium doped optical fiber 3 is excited by a 1.48 μm band semiconductor laser 6. Thereby inputted optical pulses of 1.55 μm band are amplified and subjected to dispersion compensation. By connecting the long wavelength side of the chirp fiber grating 8 with the erbium doped optical fiber 3, the longer wavelength side light is the more rapidly reflected, so that the optical signal which has propagated in a 1.33 μm zero-dispersion fiber is subjected to dispersion compensation.

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